UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply to
Attn. Of: OWW-130

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

To all interested government agencies, public groups, and individuals:

In accordance with the Environmental Protection Agency (EPA) procedures for complying with the National Environmental Policy Act (NEPA) at 40 CFR Part 6, EPA has completed an environmental review of the following proposed action:

City of Carnation
Sewer Collection and Conveyance System and
Wastewater Treatment Facility

EPA ROLE AND RESPONSIBILITY:

As a recipient of EPA Special Appropriation Act grant funds, this project is subject to NEPA compliance as required under EPA's implementing NEPA regulations at 40 CFR Part 6, Subpart E.

BACKGROUND

The City of Carnation (City) is located in the Snoqualmie Valley at the confluence of the Tolt and Snoqualmie Rivers in King County, Washington. All wastewater treatment in Carnation is currently provided by on-site sewage disposal systems that have been determined to be largely inadequate. In 1987, the Seattle-King County Department of Health (Public Health) declared a public health hazard in Carnation for two reasons: (1) the existing on-site sewage disposal in Carnation was inadequate; and (2) soil conditions in Carnation, in conjunction with on-site sewage disposal practices, allowed untreated sewage to enter the groundwater aquifer that is used for drinking water. Public health also identified a need for a wastewater treatment plant, which it reiterated in 2003.

Carnation incorporated as a city in 1912. Since that time, on-site wastewater treatment systems have been the only type of wastewater treatment and disposal used in the City. Most of these systems are septic tanks and drainfields; however, some cesspools and seepage pits are still in use. The introduction of untreated sewage into the groundwater aquifer also poses environmental threats to the Snoqualmie and Tolt Rivers, which are adjacent to the City to the west and south. Specific environmental threats include the introduction of nutrients (algae

growth stimulation), organic material (oxygen depletion due to biochemical oxygen demand), and bacterial contamination.

Besides public health and environmental threats, the lack of a public sewer and treatment system has had ongoing negative impacts on the economic health and growth of Carnation and on the City's ability to plan for urban densities under State Growth Management Act (GMA) guidelines. The lack of a public sewer and treatment system inhibits commercial and residential development and, in many cases, redevelopment in the City. Several businesses in the City have been closed because they were unable to rebuild or expand as a result of an inadequate or unavailable wastewater treatment plant. This in turn has had a negative impact on the economic health and development of the community, and a reduction in the City's tax base.

The need for a wastewater treatment facility has been discussed and debated for more than 20 years. Acting on concerns that the on-site systems might not continue to meet the City's wastewater treatment and disposal needs, the City of Carnation prepared several city sewer plans and formed citizen advisory committees. These activities led to the decision to build a centralized wastewater treatment system for the City.

PURPOSE AND NEED OF ACTION

The purpose of the proposed project is to build a centralized wastewater treatment plant, a sewage collection system within the City, and a conveyance pipeline and outfall into the Snoqualmie River to discharge treated effluent. By providing a sanitary sewer and wastewater treatment system, the City will address the public health hazard identified by Seattle-King County Public Health.

The need for the project is driven by the following factors: (1) protect groundwater quality and public health from the adverse impacts of inadequately functioning on-site sewage systems; and (2) comply with the requirement of the State GMA.

AGENCY PREFERRED ALTERNATIVE

The Agency Preferred Alternative consists of a vacuum sewer collection system in the City of Carnation, a wastewater treatment plant (to be constructed by King County), and a conveyance pipeline for treated effluent discharge into the Snoqualmie River.

The vacuum sewer system would consist of a network of buried vacuum pipelines to form the collection system within the City. One combination vacuum station/pump station would be located on the treatment plant site and serve as the vacuum source for the entire collection system. All of the wastewater would be transported from individual homes and non-residential users (i.e., businesses, schools, etc.) through the vacuum collection system into a vacuum tank located within the vacuum/pump station. From the vacuum/pump station, pumps would pump the wastewater from the vacuum tank to the treatment plant. The wastewater would be treated at the treatment facility, and the highly treated water would be piped through a conveyance pipeline to an outfall into the Snoqualmie River.

Upon completion of the project, approximately 690 connections (representing approximately 1,905 residents, as well as schools and commercial enterprises) would be connected to the new sewer system. These connections are currently using on-site disposal systems.

Vacuum Sewer System

Vacuum sewer systems combine the principles of gravity sewer operation with a central vacuum station (or stations). The vacuum sewer collection lines can be installed at shallower depths than conventional gravity systems. The connection interface between a building's side sewer and the vacuum system would be in a buried "pit" with a vacuum valve. Each vacuum valve pit typically provides sewer service to two customers, with the potential to serve up to four residences. For the businesses in Carnation, typically one service is planned for each valve pit. Each valve pit has a maximum capacity of approximately 30 gallons per minute (gpm).

The vacuum sewer collection system would consist of approximately 14,526 feet of 10-inch diameter, 8,946 feet of 8-inch diameter, and 8,610 feet of 6-inch diameter PVC vacuum sewer interceptor/trunk lines; 22,835 feet of 4-inch diameter PVC vacuum sewer collector pipe; and 5,100 feet of PVC force main (1.5-inch, 2-inch, and 3-inch diameters). The vacuum sewers would be laid with 3 to 5 feet of cover.

As discussed above, one combined vacuum/pump station would pump the wastewater from the City's vacuum sewer system to King County's treatment plant. The vacuum/pump station would likely be located near the treatment plant site and be equipped with an emergency standby power generator. The termination point for the proposed vacuum sewage collection system would be the combined vacuum/pump station. From this station, flow would be pumped to the adjacent wastewater treatment plant for processing.

Also included in the design are approximately 11 grinder pump stations that would serve a few of the remote customers who cannot practically be served by the vacuum system. The project would include a telemetry system for the City's new sewer facilities.

Wastewater Treatment Facility

The wastewater treatment plant facility would consist of the treatment process, which includes primary and advanced secondary treatment, odor control facilities, and support facilities. The plant would provide initial treatment capacity for a maximum monthly wastewater flow of about 400,000 gallons per day (gpd). The plant would be designed so that its capacity could be increased to about 450,000 gpd to meet the needs of the service area when the area is fully developed.

The treatment plant would be placed within an approximately 5-acre area. The preferred site for the treatment plant is a City-owned 10-acre parcel located on the west side of Carnation at the end of Entwistle Street. In total, these facilities would cover about 15,000 square feet. This plant footprint would not change as the plant's capacity increased because the

facilities would be initially sized to accommodate future capacity increases. When needed, capacity would be added by installing new equipment inside existing buildings.

The treatment plant would consist of six stages: coarse screening, grit removal, fine screening, biological nutrient removal, membrane bioreactors (MBRs), and disinfection with ultraviolet light. The MBR technology would produce high quality water, which would meet or exceed all applicable standards. The treated water would be conveyed in a pipeline to the outfall discharge location in the Snoqualmie River. The water would be discharged through a diffuser at the end of the 8-inch ductile iron effluent pipe and would be positioned above the riverbed.

King County completed a State Environmental Policy Act (SEPA) Environmental Impact Statement (EIS) for the Carnation Wastewater Treatment Plant in 2004. Through that process and taking into account cost, engineering, community, environmental, and policy considerations King County selected Snoqualmie River as the discharge location for treated wastewater effluent. The wetland discharge option was not selected due to lack of funding, however, it has not been completely disregarded. King County continues to pursue grant funding and developing partnership agreements to support a future wetland discharge option.

OTHER ALTERNATIVES CONSIDERED

No Action Alternative

Under the No Action Alternative, the City and King County would not pursue design and construction of a city-wide centralized sewage collection, conveyance, treatment, and disposal system. Wastewater treatment in Carnation would continue to be provided by on-site septic systems and drainfields through soil filtration and discharge to groundwater, posing an ongoing health hazard to the public.

The lack of a public sewer and treatment system will continue to prevent commercial and residential development. Several businesses in the City have been closed due to inadequate or unavailable wastewater treatment facilities. More business closures are possible under the No Action Alternative.

ACTION ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER ANALYSIS

Gravity Sewer System

The most traditional method of sewer collection service is conventional large-diameter gravity sewers. The gravity sewer system would consist of a network of buried pipelines to form the collection system within the City of Carnation. Gravity main diameters would range from 8 inches to 15 inches. Individual areas would use grinder pumps to transport sewage to the gravity system. Gravity flow to a lift station sized to accommodate the peak flows would convey the sewage through a 6-inch diameter force main to the treatment plant site.

Advantages of the gravity system include low operation and maintenance costs, and greater reliability. Disadvantages include the need for greater capital investment, the need for

greater excavation depths during construction (minimum depth of 7 feet), the likelihood of large-scale dewatering operations during construction, the need for manholes, the potential vulnerability to infiltration/inflow in areas with a high groundwater table, and the incapability of some of the service area to be served by gravity sewers.

Treatment Plant Site

The second treatment plant site considered is the Weckwerth site. The site is a privately owned 5-acre parcel on the south edge of the City and is mainly used for equipment and materials storage, and vehicle parking. It was not selected for construction of the treatment facility because it would require acquisition of private property, which would add to project expense.

Discharge Alternatives

Upland and wetland discharge alternatives were considered. The upland discharge alternative consisted of discharging the treated effluent into constructed infiltration basins. These basins would be sited in the 240-acre upland discharge study area located southeast of Carnation. About 160 acres of the study area is in forest production, and the other 80 acres is rural residential land. Surrounding land uses are rural residential, forest production, and group camps. The upland discharge alternative was not selected due to unsuitable soil conditions in the proposed discharge area.

Under the wetland discharge alternative, the treated effluent would be conveyed to the Washington State Department of Fish and Wildlife's Stillwater Wildlife Area. This approximately 450-acre area is located about 2 miles north of Carnation between the Snoqualmie Valley Trail on the north and east and the Snoqualmie River on the south and west.

As discussed above, due to lack of funding, this option was not selected by King County during the SEPA EIS process. However, King County continues to pursue grant funding and developing partnership agreements to support a future wetland discharge option.

MITIGATION AND MONITORING MEASURES

The following mitigation and monitoring measures to lessen the potential for adverse environmental impacts to marine resources shall become binding grant conditions upon the City of Carnation. If the grantee fails to comply with the grant conditions (i.e., implement mitigation measures), the responsible official within EPA may consider applying any of the sanctions specified in 40 CFR 31.43 and 40 CFR Part 6.512(a, b).

Mitigation and monitoring measures to minimize adverse environmental impacts associated with the proposed project include the following:

- The City of Carnation will implement the Reasonable and Prudent Measures relating to urban development, water quality degradation, and in-water construction agreed to during the Federal Endangered Species Act Section 7 Consultation with NOAA Fisheries.

- King County will implement a monitoring plan for water produced at the treatment plant as agreed to during the Endangered Species Act Section 7 Consultation with USFWS.

- The project construction must adhere to all applicable air quality regulations, including Puget Sound Clean Air Agency (PSCAA) regulations. Measures to minimize the impact to air quality should include covering and wetting down of soil during transport, frequent sweeping and washing of downtown streets, washing tires and undercarriages of vehicles, and minimizing idle times for construction trucks and machinery.

- Prior to construction, a Spill Prevention, Control, and Countermeasures Plan (SPCC) and a Temporary Erosion and Sediment Control Plan (TESC) will be developed and implemented, to control stormwater management during construction, reduce the amount of sediment leaving the construction site, and develop a plan for prompt containment and cleanup of any spills. Construction best management practices (BMPs) will be followed to minimize erosion and sediment runoff.

- Any portion of the treatment facility or a discharge facility located within the flood hazard area will be designed to meet flood-proofing and/or flood protection elevation requirements under local development regulations for flood hazard areas, as well as FEMA regulations.

- Major ground-disturbing construction activities will be performed during the dry season to the maximum extent possible and construction work windows for special-status fish and wildlife species will be followed as required by State and federal agencies.

- When construction will occur during sensitive time for wildlife (for example nesting months) pre-construction surveys will be performed for listed species including bald eagle, salmonid species, and other special-status plants and species to avoid or minimize impacts during construction.

- All water from dewatering operations will be managed and treated in accordance with NPDES construction standards and requirements prior to discharge to minimize turbidity, sedimentation, and the potential for erosion.

- Construction noise will be minimized to the extent practicable through the use of mitigation measures including limiting construction activities to daytime hours, establishing a complaint hotline, installing noise barriers, shutting off idling equipment, and installing mufflers on all engine-powered equipment.

- Excavation within known cultural resources areas should be monitored by a professional archaeologist.

- In the event that materials of cultural or archaeological significance are discovered during construction, work shall be halted immediately, the site secured, and EPA, the State Historic Preservation Officer, the Department of Ecology, and the potentially affected Tribes shall be notified and consulted.

- Excavated areas will be backfilled as soon as possible and street/trail segments disturbed by construction will be restored to their original condition.

- Temporary fencing and signs will be posted near the construction areas to notify residents and recreational users of road and trail closures and/or detours.

- EPA shall be contacted if there are any significant changes to the proposed project.

SUMMARY

The Environmental Assessment (EA) for the City of Carnation Sewer Collection and Conveyance System and Wastewater Treatment Facility has been completed and is attached. Based on the EA and consideration of the mitigation measures that would be binding grant conditions on the grantee, and in accordance with the guidelines for determining the significance of proposed federal actions (40 CFR Part 1508.27) and EPA criteria for initiating an Environmental Impact Statement (40 CFR Part 6.605), EPA has concluded that the City of Carnation project would not result in a significant adverse effects on the quality of the human environment.

In accordance with NEPA regulations at 40 CFR Part 1508.13, the findings of the EA are hereby incorporated by reference. The proposed project will not significantly affect socioeconomics, wetlands or floodplains, threatened or endangered species, ecologically important areas, subsistence resources, historic resources, air quality, water quality, fish and shellfish resources, nor would it conflict with approved local land use plans or policies. The proposal also conforms with applicable federal statutes and executive orders. As a result of these findings, EPA has determined that an EIS will not be required.

Comments supporting or disagreeing with this FONSI may be submitted in writing, within 30 days of the above issuance date of this FONSI, to the following address:

Hanh Shaw
U.S. Environmental Protection Agency
1200 Sixth Avenue, OWW-130
Telephone: (206) 553-0171
Fax: (206) 553-0165
Email: shaw.hanh@epa.gov

Hard copies of the Carnation Sewer Collection and Conveyance System and Wastewater Treatment Facility EA and FONSI will be distributed to Federal, State, Tribes, and local agencies as well as organizations. Additional copies of the EA and FONSI can be obtained by:

1. Contacting Hanh Shaw at (206) 553-0171, or shaw.hanh@epa.gov

2. Visiting the web at http://dnr.metrokc.gov/wtd/carnation/

3. Obtaining hard copies from King County by calling toll-free at 1-800-325-6165, ext. 35212, or emailing to CarnationWWTP@metrokc.gov. For accessible formats call (206) 684-1280 or 711 (TTY).

4. Visiting King County (201 South Jackson Street, 5th Floor, Seattle), Carnation City Hall (4621 Tolt Avenue, Carnation), Carnation Public Library (4804 Tolt Avenue, Carnation), Duvall Public Library (15619 NE Main Street, Duvall), Fall City Public Library (33415 SE 42nd Place, Fall City), and Bellevue Public Library (1111 110th Avenue NE, Bellevue).

No administrative action will be taken for at least 30 days after the release of this FONSI. EPA will fully consider all comments before taking final action.

Michael F. Gearheard, Director
Office of Water and Watersheds